(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 1 July 2004 (01.07.2004)

PCT

(10) International Publication Number WO 2004/055876 A1

(51) International Patent Classification7:

H01L 21/205

(21) International Application Number:

PCT/KR2003/001391

(22) International Filing Date:

14 July 2003 (14.07.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10-2002-0080745

KR 17 December 2002 (17.12.2002)

10-2003-0012846

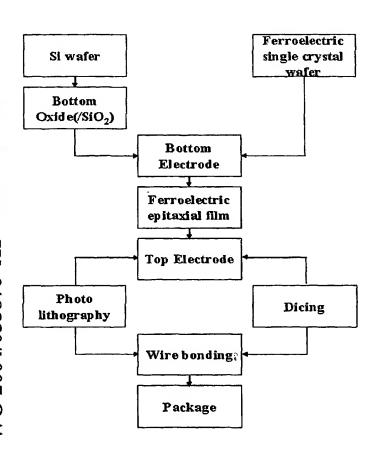
28 February 2003 (28.02.2003) KR

(71) Applicants (for all designated States except US): IBULE PHOTONICS INC. [KR/KR]; #1276-10, Jeongwang-dong, Siheung-si, Kyungki-do 429-850 (KR). EUN, Jaehwan [KR/KR]; #112-14, Hyoja-1-dong, Wansan-gu, Jeonju-si, Jeonrabuk-do 560-241 (KR). LEE, Sang-Goo [KR/KR]; Jugong 5-cha Apt. 508-305, #1844, Jeongwang-dong, Siheung-si, Kyungki-do 429-450 (KR).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KIM, Hyeongjoon [KR/KR]; Parktown 107-1303, Naejeong-dong, Bundang-gu, Seongnam-si, Kyungki-do 463-808 (KR). KIM, Minchan [KR/KR]; Woosung Apt. 204-502, #113-6, Ildo-2-dong, Jeju-si, Jeju-do 690-012 (KR).
- (74) Agents: JANG, Seongku et al.; 19th Fl., KEC Building, 275-7, Yangjae-dong, Seocho-ku, Seoul 137-130 (KR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,

[Continued on next page]

(54) Title: METHOD FOR PREPARATION OF FERROELECTRIC SINGLE CRYSTAL FILM STRUCTURE USING DEPOSI-TION METHOD



(57) Abstract: A film structure of a ferroelectric single crystal which can be beneficially used in the fabrication of high-performance electric and electronic parts and devices is prepared by forming an electrode layer having a perovskite crystal structure on a substrate made of a silicon or ferroelectric single crystal optionally polished to have a off-axis crystal structure, and epitaxially growing a layer of a ferroelectric single crystal thereon by pulsed laser deposition (PLD) or metallorganic chemical vapor deposition (MOCVD).